Brain drain, population decline and ageing in Eastern Europe: making sense of the latest data

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Emigration, population decline and ageing in EU-15 countries

Whilst Japan tops the list of the fastest ageing populations, Europe has been in the spotlight for its shrinking populations. Many eastern European countries (several of them in the EU) experience an unprecedented population decline due to a mixture of low fertility, high mortality and large-scale emigration. In fact, the Top 10 countries with the highest predicted population decline between 2017 and 2050 are, according to UN data, all in Eastern Europe.¹ Bulgaria and Latvia, two of the states that joined the EU in 2007 and 2004, will most likely see their populations drop by a whopping 23% and 22%, respectively, in just 33 years. Croatia, Lithuania and Romania are predicted to lose 17% of their population, whilst Poland and Hungary are expected to decline by 15%.²

Low fertility rates are unquestionably a major reason for the population decline in the EU. All European nations have a fertility rate below the replacement level of 2.1 – a trend that has started already decades ago. In the aforementioned countries, fertility rates – despite an upward trend in recent years – do not surpass 1.5 in Poland and Croatia, 1.6 in Lithuania, Latvia, Bulgaria and Hungary, and 1.8 in Romania (2018 data), making them a powerful explanatory tool for their population decline.³ Whilst fertility rates started to crumble after 1990, taking a big dip in the first years of the 21st century, this cannot entirely be explained by social changes following the end of the Soviet Union. Already in the late 1970s (1975-1980), Latvia’s and Croatia’s fertility rates were en par with that of Italy, at 1.89 and 1.90 – a number considerably lower than the most other European nations.⁴ Today, whilst remaining at a low level, the average fertility rate in the EU’s fastest shrinking nations is even slightly above the EU average of 1.54 children per woman (2018).⁵

A bigger explanatory factor than just the current fertility rate is the crude death rate (CDR), revealing the share of population that dies per year (or, put differently, highlighting the death per average population). In Bulgaria, Lithuania, Latvia and Croatia, the crude death rates

² Ibid.
have been rising steadily, reaching 15 deaths per 1,000 citizens per annum in the first two
countries and 14 and 13 in the latter, respectively. This is considerably higher than the EU
average of 11 (10.549) in 2018. In 2017, the crude death rates of Lithuania, Bulgaria and
Latvia were ranked number 2, 3 and 4 globally – topped only by Lesotho, and with countries
like Somalia 10 spots below, at No. 14, and Sierra Leone 30 spots below, at 34. Life
expectancy at birth in Bulgaria for the period 2015-2020 is, at under 75, lower than that of
some developing countries, including Brazil (75.8), Algeria (76.4), Malaysia (75.5) the average
for Latin America and the Caribbean (75.7). It is also 3.2 years shorter than the whole European
average. These data reveal that due to high crude death rates, resulting from relatively high
mortality, comparatively short life expectancy, high net emigration of young people, and low
fertility since the 1970s, several of the EU’s eastern member states have had to cope with
considerable population decline.

The most significant factor leading to the fast decline in population, however, poses the
high emigration rates in numerous eastern EU countries. Bulgaria’s population declined from
just under 9 million (8,9750,000) in the late 1980s to under 7 million (6,950,000) in June 2020
– a decline by nearly 25% in 30 years. At least 1.1 million Bulgarians (some estimates put the
figure as high as 2.5 million workers born in Bulgaria) are believed to live abroad,
predominantly in wealthier western EU countries. While the Bulgarian government does not
keep any data on it, Eurostat announced that the number of Bulgarians in other EU countries
topped 700,000, and estimates propose an annual exodus of at least 60,000 (mainly young)
Bulgarians. Given that in Germany alone, 30,000 new Bulgarian residents were registered in
2017, this figure might be even higher. These figures are considerable given that the Bulgarian
labour force amounted to less than 3.3 million last year, with around 3.1 million in work.

Whilst in Bulgaria, political and religious reasons also played a major role for the high
emigration numbers in the late 1980s, when Bulgarian Turks emigrated to Turkey, the main
motive for emigration from Eastern Europe to its wealthy western neighbours remains
economic. The rapid population decline after Lithuania joined the EU in 2004 impressively
highlights the pull-factors wealth and high salaries in neighbouring EU countries, among others,
play. According to the World Bank, Lithuania’s population declined from 3.38 million in 2004
to 2.8 million in 2018, amounting to a decline of 18% in 14 years – over 1.2% p.a. The fact
that few countries have experienced such an exodus of their people outside of war, famine and
forced migration, reveals the high impact free movement of labour with the EU has played for
some countries. Since 1990, when Lithuania restored its independence and opened its borders,
it population has shrank by 900,000 people, out of which 710,000 people were lost due to
negative net migration. The trend to emigrate from both Bulgaria and Lithuania is, despite
rising GDP growth at home, still going strong and not leveling off considerably. In 2015, over

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6 The World Bank (2020), Data; death rate, crude (per 1,000 people), https://data.worldbank.org/indicator/SP.DYN.CDRT.IN
7 The World Bank (2020), Data; death rate, crude (per 1,000 people): European Union, https://data.worldbank.org/indicator/SP.DYN.CDRT.IN?locations=EU
10 If one is to believe the data from the Bulgarian News Agency announced in 2015 (citing the National Statistical Institute and the Economics Institute with the Bulgarian Academy of Science), as of 2015, there were around 2.5 million people born in Bulgaria working in another country. Novinite (2015), More Bulgarians working abroad than in Bulgaria, from 6 November 2015, https://www.novinite.com/articles/171684/More+Bulgarians+Working+Abroad+Than+in+Bulgaria
14 EMN (2020), Migration in numbers, https://123.emn.it/en/#chart-14-desc

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40,000, and in 2016 and 2017, around 50,000 people left Lithuania per year.\textsuperscript{14} Indeed, the population decline after the third wave of emigration in 2008, when the country became a member of the Schengen area and when the global financial crisis led to a recession and high unemployment, and the fourth wave, when Lithuanians became concerned about rising prices after the introduction of the EURO in January 2015, was steeper than after the first two waves in the early 1990s and after 2004.\textsuperscript{15} Financial reasons for their move abroad were expressed by over two thirds of the fourth wave Lithuanian emigrants, who all mentioned their low salary as the major push factor.\textsuperscript{16} Yet, next to professional reasons such as a higher salary (60%) and personal and professional development possibilities (38%), social issues have also played a main role among the most recent emigrants, with nearly one third of the interviewed mobile labourers expressing a more tolerant society in their country of destination as another major pull-factor.\textsuperscript{17}

In light of the fact that nearly three quarters (73.6\%) of the mobile Lithuanians were aged 15-44 in 2018 – a rate nearly twice as high as this age group’s share among the general population – emigration is of great concern and a major factor not only for Lithuanian’s population decline, but also for the country’s rapid population ageing.\textsuperscript{18}

Brain circulation? Brain re-gain?

Recent literature on labour mobility in the EU often points to the rising number of mobile workers returning to their home countries. While this is true for many countries, including Lithuania, with record numbers of 17,000 to 19,500 Lithuanians returning home per year between 2012 and 2015, the picture that is painted is often not as rosy as the reality.\textsuperscript{19} First, despite the high number of returnees, the degree of outward mobility of Lithuanian citizens was still over three times higher than inward mobility of Lithuanian citizens. Second, returning mobility significantly decreased after its peak in 2014, where nearly 20,000 citizens went back to their home country, to just over 10,000 Lithuanian returnees in 2017.\textsuperscript{20} Despite the Brexit vote in 2016, the share of Lithuanians returning from the UK in 2017 was only as high (48\%) as the share of all outbound mobile workers with a Lithuanian passport heading to the UK since 1990 (47\% of all mobile workers).\textsuperscript{21} In fact, return mobility from the UK 2013-15 was significantly (around 50\%) higher than in 2016-2018.\textsuperscript{22} This impressively reveals that not even the expectation of tighter rules on immigration to the UK after Brexit and rising xenophobic sentiments in the UK after June 2016 had a significant impact on the number of Lithuanians returning from the UK after the Brexit vote.

In light of the fact that nearly half of the over 4,000 interviewed Lithuanian emigrants that left their country after 1990 consider their foreign destination their home, with just one in six (17\%) still calling Lithuania their home, it is doubtful how significant the return mobility

\textsuperscript{14} Ibid.
\textsuperscript{16} Ibid.
\textsuperscript{17} Ibid.
\textsuperscript{18} Renkuosi Lietuva, Emigration – immigration statistics, https://www.renkuosilietuva.lt/en/emigration-immigration-statistics/#:~:text=Since%201990%20the%20number%20of,thousand)%20is%20due%20to%20emigration.
\textsuperscript{19} EMN, Migration in Numbers, https://123.emn.lt/en/
\textsuperscript{20} Ibid.
\textsuperscript{21} Ibid.
\textsuperscript{22} Ibid.
to Lithuania will be in the future. As 40% of all surveyed objects express no plans to move back, it is relatively unlikely that Lithuania can manage to regain a large share of its young, skilled workers.

Having said that, Lithuania has been profiting from rising inbound migration of third country nationals, especially from Ukraine and Belarus in recent years. Due to low unemployment, a rising labour shortage and considerable GDP growth, Lithuania has been receiving a record number of immigrants from countries to its east over the past years. Ukrainian migrants, for example, have increased from a mere 181 in 2011 to over 5,700 in 2018. The total number of non-EU migrants similarly increased nearly tenfold over the same period (from 1,170 to 11,550). Such trends could be a sign that Lithuania could profit from increasing immigration by third-country-nations (TCNs), who predominantly work in professions with high labour shortage in Lithuania, for example as long-distance drivers or builders. In other words, just like much countries such as the UK and Ireland could benefit from Lithuania’s often skilled, motivated and young labour force since 2004, Lithuania could benefit from the rising number of TCNs working in high demand professions in Lithuania.

Is there a ‘brain drain’?

Labour mobility in the EU is increasingly discussed from a negative angle, especially in regard to a ‘brain drain’. Numerous scholars point out that many EU-12 member states have been losing ‘their brightest and most talented’ to richer EU-15 countries. While it is certainly true that countries like Romania and Lithuania have seen a considerable outwards mobility of their nurses and doctors, the picture that is drawn is often inaccurate and does not adequately reflect the reality in EU-12 member states. Looking at Bulgaria, one can see that it would be wrong to claim that the country is experiencing a major brain drain to EU-15 countries. While there are, of course, thousands of highly skilled mobile Bulgarians residing in other EU countries such as in Germany or the UK, the share of university graduates among the mobile Bulgarians aged 20 to 64 in 2018 was actually lower than among the general Bulgarian population [see graph I]. Although the difference is, with 25.4% among mobile citizens vs. 26.7% among the total Bulgarian population, only minimal, Bulgaria is one of only a handful EU member states where their mobile citizens less often have a university degree than the general population. In most other EU member states, the phenomenon is reverse, with tertiary education attainment being twice as common among mobile citizens in some countries like Germany (27.1% vs. 56.8% in 2018). Also, when comparing the share of university graduates among mobile labourers, Bulgaria is far behind nations like Finland or France, where around two thirds (67.5% and of 65.1%, respectively) of all mobile citizen had complete tertiary education, while in Bulgaria it was only one quarter (25.4%).

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23 EurekAlert, Most Lithuanians still emigrate for economic reasons.
24 Ibid.
25 EMN, Migration in Numbers.
26 Ibid.
28 Ibid.
29 Ibid.
Even more meaningful than looking at the share of mobile Bulgarians with a university degree in regard to a possible brain drain is analysing those with low educational attainment. The country’s accession to the EU in 2007 posed a gateway for Bulgarians to move temporarily or permanently to EU member states with higher wages and better living standards. The social groups that benefitted most from it were those with low educational achievements, for whom it would have been hard to gain a work permission without free movement of labour after the country’s EU accession. This can be clearly seen from the following figures: the number of Bulgarian mobile labourers with only primary education increased by 10.4 percentage points between 2008, when restrictions on mobility where still in place, and 2018, when all their citizens could move freely within the EU.\(^{30}\) Eurostat data impressively highlight that the majority of Bulgarians who moved to another EU country between 2008 and 2018 were low-skilled. Over one third (34%) of Bulgarians living in another EU member state had primary education – making their share twice as high as among the general Bulgarian population (17.2%).\(^{31}\) Concretely, this also means that Bulgarians with no education beyond primary school were over twice as likely to move abroad than those with a university degree in 2018.\(^{32}\) While this trend is not as pronounced in other countries like Romania and Croatia, similar overrepresentation of low-skilled workers among their mobile labourers also exist in these two countries.

\(^{31}\) Ibid.
\(^{32}\) Ibid.
The previous analysis highlighted that it were not the doctors, nurses and engineers, about whose mobility there is much ado (and much negative press coverage in terms of a brain drain from poorer eastern European countries), but often agricultural workers, drivers and people in construction and services, among many others, who posed the main group of mobile labourers from Bulgaria. As such, claims that Bulgaria has been losing their ‘best and brightest’ to richer EU countries shall be disputed. The previous analysis showed that there is no general brain drain from Bulgaria to other EU member states. Similarly, also arguments about a ‘brain waste’ or waste of skills among Bulgarian workers abroad have to be taken with a grain of salt. There is obviously a tendency among all migrants – whether mobile labourers or immigrants from third countries – that the entry into the labour market can be more difficult than in their home country due to limited language skills, the lack of networks, cultural differences and slow (or no) recognition of diplomas and certificates. This is true for most countries around the world and a natural phenomenon. As a result, many mobile workers who move to another EU member states for higher wages might start working in a position that is below their skills or below the job requirements they had to fulfil in their home country. However, first of all, such a ‘brain waste’ is often not permanent, and second, it mainly applies to high-skilled mobile labourers. A large number of Bulgarian mobile citizens, in contrast, get to use their skills and experience to a bigger extent abroad than at home. This applies predominantly to the tens of thousands of Bulgarians who were out of work in their home country, but who managed to find a job in another EU country. The following figures impressively highlights that labour mobility, for many low-skilled workers, increases the job prospects and chances to use their skills. Unskilled Bulgarians who moved to another EU member states had considerably higher employment rates, standing at nearly 60%, than those who stayed in their home country, where under 47% of them were employed in 2018 (see graph III). Similar trends are visible in many EU member states, but are by far most pronounced in the new member states. While in Lithuania, the employment rate for people aged 20-64 with only primary education stood just

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above 45%, nearly 80% of Lithuanians with low skills were in gainful employment in EU member states. Similarly, in Poland, the difference stood at around 42% to 78%, marking an increase in employment by around 85% among unskilled Poles who moved to other EU member states. The European average stands at 11.4 percentage points difference (56.1% vs. 67.5%) in employment between unskilled EU mobile citizens and those who stayed in their home country. In other words, at least for people with low educational attainment, labour mobility is a major chance to bring their skills, experience and will to work to use and contradicts the claims that labour mobility predominantly leads to a ‘brain waste’.

Graph III: Employment rate of persons aged 20-64 with primary education (mobile citizens vs. general population), 2018

Labour mobility has not only provided new chances and employment to low-skilled workers, who were often trapped in (long-term) unemployment at home or who had little motivation to become part of the (official) labour force in their home countries due to low wages and the lack of attractive work. In has also increased the chances among workers of all skill levels to find employment, to work in more attractive positions, or to receive higher wages. Due to the high outwards mobility among Bulgarians, unemployment rates fell to an all-time low of 4.34% in 2019. As the report by the Friedrich-Ebert-Stiftung and the Economics and International Relations Institute points out, such low unemployment rates were not predominantly the result of job creation in Bulgaria, but due to the decreased pressure on the labour market resulting from high outward labour mobility. In other words, because over half a million Bulgarians live in another EU member state, the conditions for employment in Bulgaria, such as the availability of work and wages, have dramatically improved over the past ten years. According to the IMF, wages in Bulgaria have risen by 6 to 11.5% per year since 2012. While this increased the standard of living among Bulgarians, it did not come at the expense of Bulgaria’s economic growth and financial stability, so the FES (2018).

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34 Ibid.
36 Ibid.
contrast: Bulgaria’s rising wages are considered to be a major factor for the increase in labour productivity in recent years, as well as in those to come. The low unemployment might, despite the rise in overall labour costs, also lead to more foreign direct investment in Bulgaria, lower the propensity among Bulgarians to emigrate, and could increase the number of Bulgarians returning home.

It has been highlighted that the high recent outward labour mobility had several positive effects on those workers who remained in Bulgaria. However, it is not only the mobile labourers who benefitted, but also their families staying behind, as well as the social systems (at least on a short-term basis). Labour mobility can alleviate pressure on social systems, especially if, as the case in Bulgaria, large parts of the emigrants are not part of the labour force. On a short- and medium-term basis, it helps reduce social contributions by the state such as unemployment benefits and social welfare. In addition, the remittances (cash transfers) sent back to the families of mobile labourers, which are significantly higher than FDI to Bulgaria, increase the purchasing power of hundreds of thousands of Bulgarians. While there are no concrete figures for Bulgaria, it is estimated that 60% of mobile Romanians regularly remit parts of their wages to their families back at home – the figure would probably be even higher if cash transfers were included. 37 Such remittances increase spending in Romania: it is estimated that 10% of all spending on durable consumer goods was paid for with remittances from former citizens. 38 Such remittances not only increase the standard of living of large numbers of Romanians, but also decrease the social disparities in one of the EU’s most socially unequal country. In addition, rising consumption leads to higher tax revenues for the state and increases aggregate demand, thereby stimulating production and fostering economic growth.

What should not be forgotten is that, generally speaking, labour mobility also provides those moving abroad with higher chances for personal and career development and/or increases their living standards. Wages in Bulgaria are, on average, only around 18% of the EU average. While a considerable wage gap between the old and new EU member states exist, the difference is nowhere as pronounced as in Bulgaria. Despite rising salaries over the last years, Bulgarian wages are, on average, less than half of those in other EU-12 countries, with the exception of Romania. The average salary in Bulgaria was, at its all-time high in December 2019, only around €690 a month – around one sixth of the average salary in Germany, while prices were only around 50% cheaper than in Germany. As a result, 95% of interviewed Bulgarians would consider looking for work abroad for higher wages, according to a survey from 2018. 39 The highest rate of people who already consider working abroad are those with low skills (30% vs. 18% with high skills) as well as the unemployed (which are, at 36%, over twice as likely to consider mobility compared to Bulgarians working for a state enterprise. 40 This shows that low wages remain the main motivation for workers to move abroad. Even if mobility to another EU country often means a job below the skill level of skilled or high-skilled workers, it significantly increases mobile labourers’ wages and standard of living. This explains why year by year, around 60,000 Bulgarians move to another EU country.

It cannot be denied that, at least long-term, the Bulgarian economy will suffer from the exodus of young Bulgarians (skilled or unskilled) if they do no return to Bulgaria. However, in light of the fact that an increasing number of Bulgarians are starting to return to their home country Bulgaria might even benefit from labour mobility and the new skills, networks and

38 Ibid.
39 Friedrich-Ebert-Stiftung et al. (2018), The impact of labour mobility on the Bulgarian economy.
40 Ibid.
financial means their returning citizens bring back. There is still a long way to go for Bulgarians to not look for work abroad, as the wage difference is, also in 2020, still pronounced. However, considering that 90% of all interviewees expressed that higher wages would keep them in Bulgaria, it is of utmost importance for Bulgaria to increase labour productivity and to keep unemployment levels low.\footnote{Ibid.} It is estimated that emigration declines significantly once the gross earnings in PPS comparison surpass 62% in the home country as compared to the country of destination. While this rate has already increased significantly, from 15 to 37% when compared to Germany, it is still a long time to go to reach the ‘emigration threshold’ for emigrants to Germany (see graph IV).\footnote{Eurostat (2019), EU citizens living in another member state.} Yet, due to rising wages at home, Bulgaria is close to reaching the assumed emigration threshold for other EU member states, such as Spain – a sign that labour mobility could decline in the near future. Combined with the possibility that mobile Bulgarians will return on a short- or mid-term – only 22% of all mobile Bulgarians rule out returning home –, Bulgaria might even be able to slow down the speed of its population decline and to lower old-age dependency.\footnote{Ibid.} Such ‘brain regain’ is crucial for Bulgaria, even if most of the labour mobility from Bulgaria cannot be described as ‘brain drain’, as argued above.

**Graph IV: Gross earnings in PPS comparison**

![Graph IV: Gross earnings in PPS comparison](image)

*Source: Eurostat, Labour Market Data*

**Summary**

This paper has shown that some common claims, such as that labour mobility puts a strain on the country of origin due to a high exodus of highly skilled labourers (‘brain drain’), have to be reconsidered for several EU-12 countries. It was revealed that countries like Bulgaria and its citizens have, to a large extent, benefitted from labour mobility to EU-15, as it provided employment to tens of thousands of unemployed low-skilled workers, opened up new career paths to high income jobs for skilled- and high-skilled labourers, reduced unemployed at home, increased wages and productivity in Bulgaria, and eased pressure on social systems while at the same time it increased the spending power of family members back home due to remittances from mobile labourers. Yet, while for the time being, the positive aspects of labour mobility

\footnote{Ibid.}
often outweigh the disadvantages, at least in the case of Bulgaria, it cannot be denied that labour mobility emigration can pose a demographic time bomb if return mobility is limited.

This paper has shown that while return mobility (‘brain regain’) is already happening in many EU-12 states such as Lithuania, the key to easing the negative effects of population decline is to improve the standard of living, including wages, medical and social care, and personal freedom in EU-12 countries. As higher wages remain the main driving force for emigration, improving the employment conditions at home would lead to less outward migration, often coupled with higher immigration from third countries or by returnees. The case of Lithuania has revealed that with the rise of wages, EU-12 countries become more popular destinations for immigrants. As a result, while labour mobility from EU-12 to EU-15 countries has led to labour shortages in some professions, such shortages can be increasingly covered by immigrants from third countries, such as Ukraine. Coupled with rising return mobility by its own mobile citizens, Lithuania reached nearly zero net emigration (-3,300 people) in 2018 – down from a negative balance of around 78,000 in 2010. This shows that even for Baltic states like Lithuania, which experienced a relatively strong brain drain since 2004, trends are already reversing. This shows that even if there exists a brain drain in some countries, such a phenomenon does not have to be permanent but could even lead to a brain (re)gain.

As long as societies are open to inward and outward migration, vast chances for their citizens open up. Migration and labour mobility are a two-way street, and while there certainly are some downsides to it, it entails vast social, economic and personal gains. It all depends on the openness of societies so that a balance of supply and demand of labour can be ensured.

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44 EMN, Migration in Numbers.